QinetiQ

Hydrodynamic performance of podded drives assessed by model experiments

Wendy Ball

A presentation to: Podded Drives Industry Day

17 January 2002

QinetiQ

Contents

1 Narrow Beam Leander Class Frigate (1989 - 1995)
  - fixed twin tractor pods and flap rudders integral with the pod-struts
2 Modern generic frigate (1999 - 2004)
  - commercial-type twin tractor pods with limited azimuthing

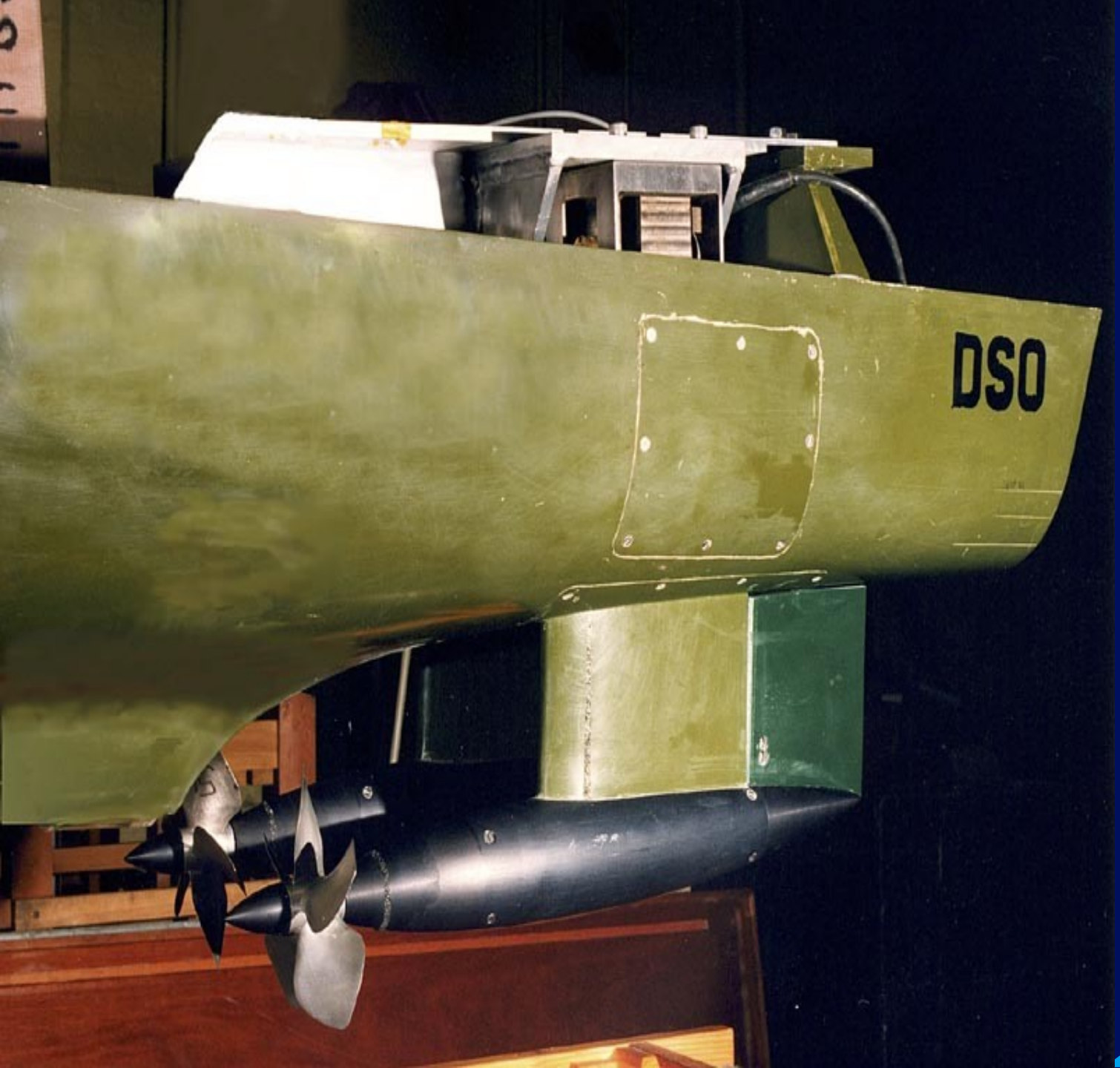
Section 1

Leander Class Frigate

QinetiQ

Hydrodynamic performance assessment

- Integrated hull-propeller studies for improving propeller inflow (TM89308)
- Wake survey & cavitation viewing (TR91320)
- Resistance & propulsion (TR93033)
- Force & moment on pod & rudder inclined to flow (TR93004)
- Manoeuvrability & directional stability (CR95051)
- Seakeeping (CR95078)



Model of a Narrow Beam Leander Class Frigate controlled by fixed twin tractor pods and flap rudders

Section 2

Modern generic frigate

QinetiQ

Hydrodynamic performance assessment

- Questionnaire to pod suppliers (TR990192)
- Proposed model assessment program (TR990191)
- Integrated hull-pod design (CR004256)
- Optimum pod orientation (CR004257)
- Resistance & propulsion (CR020426)
- Manoeuvrability & directional stability (2003)
- Seakeeping (2004)

Model of a modern generic frigate controlled by twin tractor pods with limited azimuthing

Concluding remarks

- Complete proposed mono-hull model experiments
- Extend the model test study on manoeuvring
- Validate computational fluid dynamic codes
- Continue to expand understanding of performance

QinetiQ

Next Presentation

Mr Jukka Kuuskoski

ABB Azipod

WSA
POWERPOINT

WARSHIP SUPPORT AGENCY
Defence Logistics Organisation